

R E M A R K S

As requested by the Examiner, the Applicant is resubmitting a set of formal drawings.

Claims 8, 21 and 34 were cancelled in order to overcome the rejection under 35 USC 112, second paragraph, as being indefinite. Claims 45-46 have also been amended to overcome this rejection. Further, Claims 9-10, 22-23 and 35-36 have been amended to now depend from Claims 1, 14 and 27, respectively.

Claims 1-6, 8-19, 21-26, 40 and 45-46 stand rejected under 35 USC 102 as being anticipated by Ueno et al. Claims 7 and 20 stand rejected under 35 USC 103 as being unpatentable over Ueno et al. in view of Guetz et al. Claims 27-32, 34-39 and 47 stand rejected under 35 USC 103 as being unpatentable over Ueno et al. in view of Lempel, Claim 33 stands rejected under 35 USC 103 as being unpatentable over Ueno et al. in view of Lempel, and in further view of Guetz et al. Based on the following, these rejections are respectfully traversed.

In response to the above rejection, it is respectfully submitted that the claims recite features not taught by Ueno et al. In particular such features include "determining values of additional pixels based on values of

pixels in the first block and on values of pixels in the one or more blocks", as recited in claims 1, 14, 27 and 40.

In addressing the above feature in the present rejections, columns 1-2, 7-8, 15-16, and 19-21, of Ueno et al. is being relied on. However, in reviewing these portions of Ueno et al., nowhere is such a feature taught or suggested. For example, in column 19, Ueno et al. only discloses that a signal 401 is obtained by horizontal up-sampling of the low resolution local decoded signal 56.

In view of the above, it is evident that Ueno et al. does not disclose "determining values of additional pixels based on values of pixels in the first block and on values of pixels in the one or more blocks", as required by the claims. Therefore, it is respectfully submitted that this feature is distinguishable over Ueno et al.

The above-described deficiencies of Ueno et al. are also not addressed by either Lempel or Guetz et al. Thus, the invention of Claims 1-7, 9-20, 22-33, 35-40 and 45-47 is neither anticipated nor made obvious by Ueno et al. alone or in combination with either Lempel or Guetz et al.

Therefore, it is respectfully requested that these rejections be reconsidered and withdrawn.

Claims 41-43 stand rejected under 35 USC 102 as being anticipated by Yonemitsu et al. Claim 44 stands rejected

under 35 USC 103 as being unpatentable over Yonemitsu et al. in view of Song et al. Based on the following, these rejections are respectfully traversed.

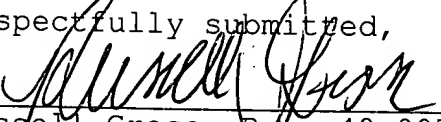
In order to clarify the presently claimed invention, claim 42 has been written in independent form to include the subject matter of cancelled claim 41. In view of this amendment, it is respectfully submitted that the claims recite features neither taught nor suggested by Yonemitsu et al. In particular, such features include "locating, in  $N (N \geq 1)$  target frames, one or more blocks of pixels that substantially correspond to the first block of pixels".

In column 3, lines 50-56, Yonemitsu et al. discloses that the up-sampling circuit adaptively refers to both of a picture from the upper layer...and another picture from the lower layer... However, nowhere does Yonemitsu et al. disclose that the up sampling circuit perform "locating, in  $N (N \geq 1)$  target frames, one or more blocks of pixels that substantially correspond to the first block of pixels", as required by the claims. Therefore, it is respectfully submitted that this feature is distinguishable over Yonemitsu et al.

The above-described deficiencies of Yonemitsu et al. are also not addressed by Song et al. Thus, the invention of claims 42-44 is neither anticipated nor made Yonemitsu

et al. alone or in combination with Song et al. Therefore,  
it is respectfully requested that these rejections be  
reconsidered and withdrawn.

The Commissioner is hereby authorized to credit any  
overpayment or charge any fee (except the issue fee) to  
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Respectfully submitted,  
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On September 6, 2001

By Edna Chapa

## A P P E N D I X

9. (AMENDED) A method according to claim 8~~1~~, wherein the reference frame comprises a bi-directional (B) frame; and

wherein the method further comprises, before the selecting step, the step of determining a location of the first block in the reference frame based on blocks of pixels in frames which precede and which follow the reference frame.

10. (AMENDED) A method according to claim 8~~1~~, wherein the reference frame comprises one of an intramode (I) frame and a predictive (P) frame; and

wherein the N target frames comprise at least one of a P frame and a bi-directional (B) frame.

22. (AMENDED) Computer-executable process steps according to claim 2~~1~~14, wherein the reference frame comprises a bi-directional (B) frame; and

wherein the computer-executable process steps further comprise a code to determine a location of the first block in the reference frame based on blocks of pixels in frames which precede and which follow the reference frame.

23. (AMENDED) Computer-executable process steps according to claim ~~21~~14, wherein the reference frame comprises one of an intramode (I) frame and a predictive (P) frame; and

wherein the N target frames comprise at least one of a P frame and a bi-directional (B) frame.

35. (AMENDED) An apparatus according to claim ~~34~~27, wherein the reference frame comprises a bi-directional (B) frame; and

wherein, before selecting the first block, the processor executes process steps so as to determine a location of the first block in the reference frame based on blocks of pixels in frames which precede and which follow the reference frame.

36. (AMENDED) An apparatus according to claim ~~34~~27, wherein the reference frame comprises one of an intramode (I) frame and a predictive (P) frame; and

wherein the N target frames comprise at least one of a P frame and a bi-directional (B) frame.

42. (AMENDED) A television system ~~according to Claim~~  
41, which receives coded video data, and which forms images  
based on the coded video data, the television system  
comprising:

a decoder which decodes the video data to produce  
frames of video;

a processor which increases a resolution of a  
reference frame of the video based on pixels in the  
reference frame and based on pixels in at least one other  
target frame of the video; and

a display which displays an image based on the  
reference frame;

wherein the processor increases the resolution of the reference frame by selecting blocks of pixels in the reference frame and, for each selected block, (i) locating, in  $N$  ( $N \geq 1$ ) target frames, one or more blocks of pixels that substantially correspond to the first block of pixels, where the  $N$  target frames are separate from the reference frame; (ii) determining values of additional pixels based on values of pixels in the selected block and on values of pixels in the one or more blocks, and (iii) adding the additional pixels among the pixels in the selected block.

45. (TWICE AMENDED) A method according to Claim 4, wherein, ~~in a case that the reference and target frames of video are coded using MPEG coding,~~ the locating step locates the one or more blocks using motion vectors present in an ~~MPEG~~-coded bitstream for the target frames; and

wherein the coefficients are determined using DCT values of at least one coded residual, where the at least one coded residual comprises differences between the reference frame and the target frame(s).

46. (TWICE AMENDED) Computer-executable process steps according to Claim 17, wherein, ~~in a case that the reference and target frames of video are coded using MPEG coding,~~ the locating code locates the one or more blocks using motion vectors present in an ~~MPEG~~-coded bitstream for the target frames; and

wherein the coefficients are determined using DCT values of at least one coded residual, where the at least one coded residual comprises differences between the reference frame and the target frame(s).